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## ► To cite this version:

Séverine Borderon, Valérie Sanseverino-Godfrin. Companies' strategies to decrease environmental impacts: the French example of the environmental impacts assessments law implementation. Conférence internationale sur le thème des Entreprises face aux changements climatiques, Apr 2011, Warsaw, Poland. 18 p. - ISBN 978-83-7378-673-8. hal-00659608

**HAL Id: hal-00659608**

**<https://hal-mines-paristech.archives-ouvertes.fr/hal-00659608>**

Submitted on 13 Jan 2012

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## **Companies' strategies to decrease environmental impacts : the French example of the environmental impacts assessments law implementation**

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### **Abstract**

*Companies' impacts on biodiversity can provoke irreversible damage. Biodiversity is drastically decreasing, and alarming preoccupations related to climate change arise. It is important to take conscience that humans' activities play an important part on such a result.*

*In order to help companies to limit their impact on biodiversity, the law has developed tools such as environmental impact assessments. It aims at responsabilising firms by improving their knowledge on their environmental impacts and at anticipating damage in order to avoid it the most upstream possible.*

*Companies manage the use of those tools. They can decide to use it efficiently for the environment or not. Generally, they would prefer to balance their environmental, social and economical interests by negotiating the acceptance of their project with the different stake-holders. It is called the ecological negotiation.*

*The aim of this paper is to stress the power companies have to protect the environment and to highlight the perspectives that are emerging from the use of this assessment by firms(public as well as private) such as the use of compensation methods. This study is mostly based on experts' statements, as it has been realised with an ecological engineers consulting firms partnership.*

### **Keywords**

*Environmental impact assessment law, companies' given responsibilities, ecological negotiation, compensation methods.*

### **Introduction**

Companies may have the power to limit their impact on climate change and global warming. The implementation of international as well as national laws tend to give them tools to reach such an objective. Indeed, it is known that pollutions and industrial catastrophes negatively impact on natural resources what has been pointed out as one of the cause of global warming. Indeed, alarming reports brought to light the depletion of natural resources and the disappearance of numerous botanical and animal species, what led to think about the cohabitation of human with its environment and questioned about the foundations of our

society. To meet these concerns, the United Nations Framework Convention on Climate Change (UNFCCC) was adopted in 1992, to give basis for an international conduct to follow in order to reduce global warming<sup>1</sup>. At the same time, the Convention on Biological Diversity (CBD) was signed by 193 states to promote "sustainable development" and to take care of natural resources. So, to limit pollution and environmental impacts, humans' activities have to be considered regarding Earth's capacities and abilities to support them.

To answer this need, tools such as Environmental Impact Assessments (EIA) that exist since the 60's in the United-States and the middle of 70's in France - first state in Europe (André, 2007, p.IX), return on a front stage, and interests for these tools developed quickly in international law. In fact, several international conventions recommend EIA's application. Thus for example, the 1985 EC Directive on Environmental Impact Assessment (Council Directive 85/337/EEC, OJ L175, 5 July 1985, 40) or the 1991 UNECE Convention on Environmental Impact Assessment in a Transboundary Context (1991 Espoo Convention) arose. In addition, more than developing in international law, the question of giving to EIA a customary legal status appeared, and it is now required in diversified contexts such as International Financial Institutions as the World Bank for example.

The increasing of interests for Environmental Impact Assessments comes from its preventive aim. In fact, EIA is a strategic tool that helps decision-makers to limit or avoid ecological damages. It has been created to give to companies the knowledge about the environmental impacts of their activities, before they build their project. One of the objective of such a preventive ambition is to integrate projects into the ecosystem and so, to give to industrial exploitations an ecological compatibility based on a long term perspective. But it also contribute to make firms responsible for their impact on biodiversity. Indeed, the addition of the environmental impacts of many firms provokes important damages that are sometimes irreversible, what shows the necessity for the most polluting companies (public as well as private) to limit their impacts and to act in a preventive way. However, in practice, firms do not yet take EIA seriously into account. In fact, EIA is an emerging tool that is still badly known and misused by companies which, for most of them, consider it as a simple administrative document that costs time and money. These consequences could be limited with the help of firms and an improvement of the current law (Practical Report, 2010).

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<sup>1</sup> UNFCCC website, visited on 2011 march 14th: [http://unfccc.int/kyoto\\_protocol/items/2830.php](http://unfccc.int/kyoto_protocol/items/2830.php)

Thus, the aim of this paper is to give a view on the legal aspects of EIA's requirements, in order to guide firms to realise that the way they use this tool can make the difference at the time of implementing an activity, regarding environmental impacts. Thus, this paper leads to highlight and questioned the preventive approach of environmental impact assessments (1) in order to give companies an opportunity to work on their growth perspectives, in an ecologically integrated way (2). The firms' responsabilisation is the basis of this reflection that has been realised through an analysis of the way companies manage EIA's legal dispositions to avoid, limit or compensate negative impacts of their projects. This analysis is mainly based on experts' statements.

## **1. Is EIA a good mean to limit environmental impacts?**

Environmental Impact Assessment was created to give project manager the possibility to make his decision to build his project, with full knowledge of facts. Consequently, the aim of EIA was to responsabilise the decision-maker regarding his environmental impacts (1.1). However, the French experience reveals that firms did not feel concerned about these assessments, what aimed at ignoring their environmental impacts and at distorting EIA from its initial aim (1.2).

### **1.1. Responsibilising<sup>2</sup> firms as EIA's legal founding**

#### **1.1.1. The preventive actions required by EIA's legal application**

In Europe, France was the first state to integrate this tool in its legal system. Thus, the article 2 of the law 76-629 of July 10th, 1976 relative to nature protection<sup>3</sup> refers explicitly to the obligation to perform an impact assessment. To be efficient, the decree 77-1141 of October 12th, 1977 defines EIA's application conditions, however, it gives no precision to explain precisely how to realise an EIA. Nevertheless, many conditions are required.

Thus, the procedure obliges the project manager to evaluate the consequences of his project on biodiversity thanks to a scientific and technical expertise. So, he has to explain his choices relative to the project location, the technical and aesthetic solutions he has chosen, etc. Moreover, the assessment must reveal the integration of the project in its natural environment. The project manager has to justify its choices by demonstrating that he plans to undertake the best adaptation to the ground (Tronchon, 1994, p.9). Economical as well as technical arguments also have to be revealed. Indeed, EIA does not have to be restricted to a mere

<sup>2</sup> Responsibilising means to make firms self-responsible for the acts.

<sup>3</sup> Codified to articles L.122-1 in L.122-3 and R.122- 3 of the French environmental code.

report of the site's initial inventory but it has to constitute a research on the project's consequences and on the means to avoid, to reduce and to possibly compensate the negative impacts of the project.

These three notions (to avoid, to reduce and to compensate) are the founding of the EIA's preventive aspects, and the disposition of EIA law that requires more attention. They appear in several European Directive such as the Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment (EIA Directive) transposed in France by the decree N 93-245 of February 23rd, 1993 concerning impact assessment and concerning the scope of public inquiries. Moreover, these notions are also mentioned in Directives which aim at protecting the environment like the Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the "Natura 2000" network); but also in Directives which require an active participation from companies to limit their environmental impacts such as the Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control, now replaced by the Directive 2008/1/EC of the European Parliament and of the Council of 15 January 2008 (IPPC). This Directive aims at limiting pollution which comes from various industrial sources within the EU. "[It] requires industrial and agricultural activities with a high pollution potential to have a permit. This permit can only be issued if certain environmental conditions are met, so that the companies themselves bear responsibility for preventing and reducing any pollution they may cause"<sup>4</sup>. So, to receive a permit, the project has to be preventive. To do so, the project plan has to be open to eventual changes, in order to adapt to alternative solutions to avoid, to reduce or to compensate for these damages. Alternative measures to avoid nuisance can involve heavy modifications such as a change of plan or site of setting-up, but they also can implement very simple measures such as the choice of a season to realise works for example (DIREN PACA, 2009, p.7).

When it appears that the avoidance of damages is technically or economically not possible, the reduction of the impacts will be looked for (CGDD, 2009, p.2). This reduction takes place during the construction phase or during the exploitation. It consists in limiting the influence of the works, in avoiding the cuts of ecological corridors, or in restoring a plant place setting inside or near the project plan. These measures aim at correcting the negative effects by using

<sup>4</sup> Europa Lex website, visited on 2011, march 16th :  
[http://europa.eu/legislation\\_summaries/environment/waste\\_management/128045\\_en.htm](http://europa.eu/legislation_summaries/environment/waste_management/128045_en.htm)

the best available techniques, and have to take into account the most advanced state of the technique<sup>5</sup>.

Finally, some impacts cannot be avoided nor reduced. In this case, we speak about residual risks. So, the project manager will have to propose ex-ante compensatory measures (Lucas, 2008). These measures go out of the frame of technical conception of the project, and their objective joins the ecological approach that aims at a neutral ecological balance assessment. The idea is to avoid ecological capital's destruction and to plan a global improvement of the site's ecological value.

Thus, if many legislations promote such EIA's implementation and ask firms to limit their impact on biodiversity, they need national transposition to be efficient; and France has failed to do so in many cases<sup>6</sup>. Consequently, international pressure and European control forced France to react and to consider the protection of the environment with more strength. Many national reforms appeared such as the law "Grenelle II" (law 2010-788 of July 12th, 2010), to incite France to enforce its international commitments, and to improve the EIA's process.

### 1.1.2. The strengthen of EIA's control to make firms self-responsible

Companies used to consider Environmental Impact Assessment as a simple administrative formality (Tronchon, 1996), instead of using it as a strategic tool that warns decision-maker concerning its environmental impacts. Consequently, to mitigate firms' ignorance regarding EIA and to make them self-responsible regarding their behaviour towards the environment, reforms were implemented. Thus, a strengthening of the state's organisation and the state's control has been launched, and the implementation of the governance principle, which means the improvement of the public participation during the Environmental Impact Assessment process, has also recently been implemented.

<sup>5</sup> See Article 2 §12 and annexe IV of Directive 2008/1/EC of the European Parliament and of the Council of 15 January 2008 IPPC, JOCE L.24/8 2008, January 28th. A new IPPC Directive has recently been voted and plans to encourage the use of Best Available Techniques.

<sup>6</sup> It has been claimed that France did not implement the part of the 1992 Directive that asks firms to realise an EIA which takes care of the "nature sensitivity". Then, the European Union Court of Justice condemned France to implement the European legislation (CJUE march 4th, 2010, C-241 08). In the same way, the European Commission recently assigned France in front of the EU's Court of justice for the non-application of the EU legislation concerning industrial pollution (march 14th, 2011). Indeed, it seems that at least 62 industrial installations localised in France are working without the authorization asked by the European Directive.

To make firms more responsible for their environmental impacts, the state's environmental organisation has been reviewed. Indeed, the multiplication of state's competences to manage environmental concerns, accumulated during years, aimed at a confusion within the state's organisation. That is why, a new environmental policy was elaborated by the decree of February 28th, 2009 in order to improve state's efficiency to manage and control environmental concerns. This policy led to the creation of an unique pilot to manage sustainable development politics, at the regional level. This pilot is called DREAL (Directions Régionales de l'Environnement, de l'Aménagement et du Logement). Thus, now, DREAL is the only competent authority to manage environmental concerns at the regional level (Rapport des Ministères sur le renforcement et la structuration des polices de l'environnement, 2005). This reform has repercussion within the EIA's context as DREAL is an authority which can accept or refuse a project's permit after analysing EIA. In addition, the creation of an "Environmental Authority" has been designed in the decree n°2009-496 of April 30th, 2009 in order to improve the framework process of Industrials' requests and to improve EIA's controls<sup>7</sup>. This authority aims at estimating the relevance impact assessments regarding the infrastructure projects. It gives an opinion concerning every project that needs to realise an EIA (Bradé, 2009, p.13). Thus, the Environmental Authority comments on the quality of the EIA's content and on its conformity with environmental laws. It also evaluates EIA's proportionality and evaluates the adaptation of the information given to the project's stakes. The objective of this structure is to improve firms' knowledge concerning their impact, and to guide them to find the best alternatives available for their project. Consequently, while elaborating its Environmental Impact Assessment, the firm can benefit from the Environmental Authority's opinion.

The public participation is also an important knowledge to consider while building a project (Andre, 2007, p.427 ). That is why, it has also be been part of the Grenelle's reform. Indeed, initially, public participation appeared late in the EIA process. The public participation used to be programmed once the project were already accepted by the competent authority. So, considering social pressure relative to environmental protection, the Grenelle 2 Law reformed EIA and public requests<sup>8</sup>.

<sup>7</sup> Decree n°2009-496 of April 30th, 2009 creating the environmental authority. This decree comes to complete the transposition in France of the directive 85/337 of June 27th, 1985 concerning the evaluation of the incidences of certain projects public and deprived on the environment and is transposed to articles 122-1 and 122-7 of the code of the environment.

<sup>8</sup> See Articles 230 and following, law 2010-788 of July 12th, 2010.



Indeed, EIA is the only tool that public can refer to. As a consequence, the reform opens to public the access to EIA before any decision of authorisation is taken, and that, independently from public inquiry or other procedure of public consulting (excepting the measures taken with urgency). The aim was to promote public participation, and so, to apply the firms' integrated development requirements. The benefits for firms is to know before, the environmental risks they take while planning their projects. They can earn time and money by avoiding the ecological damages revealed by the public participation. Indeed, more information they get upstream, better they can plan their project. Although it may initially cost more, they may avoid huge waste of money, and huge environmental catastrophes.

The Environmental Authority as well as public only give an opinion that is not legally binding. Consequently, companies are free to take these advices into account while filling their authorisation file. That is why, companies keep responsible for the impacts of their projects. So, if the law gives tools to companies in order for them to improve their integration into the environment, the part they play to implement these tools remains essential.

## **1.2. The Firms' use of EIA as a limit of impacts' reduction ?**

Companies have the central place within the Environmental Impact Assessment process. In fact, although the state's administration controls environmental studies and although the public can participate to improve companies' integration into the global ecosystem, firms remain to be the main actor of impacts reduction. Indeed, they are in charge of realising EIA (1.2.1.) and they also manage the ecological discussion that decides on the way they will have to reduce or compensate for nuisance (1.2.2.).

### **1.2.1. Questioning the decision-making power of companies and its consequences on impacts reduction**

As we understand from the above demonstration, firms can use EIA as a preventive tool to reduce environmental impacts. Many laws refer to it, however, these laws do not give precision relative to the way firms have to realise an EIA. A practical study has shown that this lack of precision is a failure on the preventive process. In fact, it gives wide room to firms to manage the elaboration of the EIA. This freedom leads to drifts in the EIA's implementation which begins with the choices companies have to fill their EIA's obligations. Indeed, they have the choice, first, to hire or not an ecological engineers consultants firm or to realise the EIA by themselves. Usually, they hire experts to do it. However, while selecting



the consultants firm to hire, firms would make their choice regarding the fee, instead of looking at the measures proposed to protect the environment (Tronchon, 1994).

The quality of the EIA depends on the ecological engineers consulting firm competences and on the ecologists' qualifications. Even there, the law is very wide and leaves room to the project manager to choose himself the consulting firm to hire. Also, it is interesting to underline that the law does not impose either the number of experts that is necessary to elaborate an EIA. It means that an ecological engineers consulting firm can send only one botanist on the ground if such is the project manager's wishes. Consequently, no study will be made on insects, birds and other species which can also be impacted by the project (Empirical Report, 2010)<sup>9</sup>.

Indeed, the ecological interest of an EIA should be to reveal the quality of the chosen site, and to determinate if there are species which "preservation stake" is strong or not. However, the ecological interests and the means given to the ecologists to realise their study are not sufficient. The project manager is often in a hurry and not wishing to put a considerable amount of money in this "document". That explains why EIA is often realised at a minimal level. So, ecologists do not dispose of enough time, nor sufficient means and materials to elaborate a precise study that could revue all the species present on the site. Moreover, the law does not impose such an inventory<sup>10</sup>. That is why, EIA usually lack of precision.

Let us remind the role of control which play the public and environmental associations. If these actors reveal a lack within the EIA, they can question the credibility of the EIA financed by the firm. Looking at the place associations and public have during the authorisation procedure, these situations should occur less and less often. So, companies decide on the ecological engineers consulting firms that will realise the EIA. They also decide on the quality of the EIA, the time engineers will work on it, the means they will dispose to realise it, etc. And the law does not say anything on these questions. Firms are free to decide. But the new state's organisation and public participation impose to discuss more about environmental concerns, and to find compromise. This negotiation tend to improve EIA's quality and to change the firms' stake regarding ecological needs.

<sup>9</sup> This report has been made with the help of EcoMed which is a partner of the study that founds this reflection. It is a French ecological engineers consultants firms. This report contains information from many sources such as environmental associations.. See the website: <http://www.ecomed.fr/en/homepage.html>

<sup>10</sup> See CA de Versailles, arrêt du 18 septembre 2008, N° 07VE01196.

### **1.2.2. The ecological negotiation : Questioning the efficiency of EIA's dispositions on impacts reduction?**

The ecological negotiation is the discussion which arises between the actors that interact during the EIA's process. The EIA is a compromise between various interests at stake. Consequently, it is necessary to manage the avoidance of ecological impacts balancing social, economical and ecological concerns. However, when firms have money, it is sometime easier for them to pay for compensation instead of avoiding damages. That is why, negotiation is needed.

In fact, humans have rights and duties towards the environment which is defined as a common heritage of the nation. Public as well as private actors appear to protect the environment. Thus state protects common interest, and environmental associations tend to protect the global environment, or particular species for example. But firms, and state sometimes, can have an economical or a social interest in developing an activity.

Indeed, generally, creating a new activity is a benefit for a city or a region. It can impact on social and economical development. So, state's authority can have an interest a project to be realised, particularly when the public interest is at stake (Empirical Report, 2010). In such a case, the firm's stake is not its request to be accepted but to balance environmental constraints with its economical resources. Consequently, efforts to reduce environmental impacts, while realising its EIA, would be lesser. So, public and association pressure can play an important part to force firms to respect the environment and to enforce EIA's dispositions. To take a concrete example of the ecological negotiation, a project to build a photovoltaic park was planned in PACA region. The public interest was declared, consequently, the firm knew that its project would be accepted even if residual impact would exist. However, a group of local environmental associations was reluctant to accept this project, regarding the particularity of the site selected. That is why, to be approved a negotiation was needed .

Thus, 300 hectares were available to realise the project. A communication in the Newspaper was published to inform the public of this coming project. As required, an Environmental Impact Assessment was realised by an ecological engineers consulting firm, but this EIA was not precise. So, an association, which was specialised on this particular area, pointed out the presence of a particular ground quality, and informed the firm that it would have to care about the ground. This first discussion between the firm and the association leads the firm to ask its

consultants firm to give a special attention to this area. Consequently, the consultants firm attempted to answer a very precise protocol which aimed at exhaustiveness. The EIA was made according to a very fine method of inventory. Moreover, through further studies and various discussions with environmental associations, it appeared that concentrating the project on only 160 hectares of ground would lead to avoid the destruction of protected species. The associations pointed out this fact and, again, the firm decided to take it into account to avoid legal problems (Empirical Report, 2010).

The result is that, only considering the legal procedure gives priority to economical and social interests as the law does not enough constraint firms to enforce the EIA dispositions. Indeed, initially, the firm realised a light EIA. This example shows that if no association get informed upstream, then environmental damages would not have been avoided nor reduced. No effort to do so was planned by the firm.

Generally, in such case, instead of avoiding damages, firms would prefer to compensate for it. In fact, compensation has the advantage not to change the project manager's initial plans. Compensation method offers the project manager the possibility to substitute destroyed ground by other equivalent ground regarding a compensatory ratio defined by the DREAL. Thus, for example, one hectare of a destructed land can be compensated by the preservation of five hectares of an other land which contains the same ecological characteristics. So, compensation method limits the cost of modifying the project plans by only considering the price of a compensatory land and preservation services.

The consequences of resorting in compensation instead of using preventive methods aims at accepting environmental damages. Indeed, the state's authority gives its approval on environmental damages if substitutable grounds are found, what can be considered as a "permit to destroy the environment". It means that the state's authority could accept firms' environmental impacts although preventive measures could have been implemented. Consequently, using compensation is a limit to the preventive aim of EIA that needs to be framed.

## **2. For the accentuation of the use of preventive methods by companies**

The practical application of EIA reveals that the enforcement of firms' obligation to avoid, to reduce and, when it is possible, to compensate for environmental damages, is not well implemented. In fact, a drift to compensation has been underlined, that is why it is necessary

to think about a way to increase preventive attitudes from firms (2.1.) and to frame the use of compensation methods (2.2.).

## **2.1. To increase preventive attitude from companies**

To increase preventive attitude from companies, it is necessary to reconsider the EIA's central disposition that asks firms to avoid, to reduce, and possibly, to compensate for environmental damage (2.1.1.) and to promote preventive and integrative strategies which aim at a volunteer behaviour from companies to act in a preventive way (2.1.2.).

### **2.1.1. Reconsidering the EIA's central disposition**

The weight of EIA, within the authorisation request file, is based on this disposition, which stake leads to reflect how serious are firms while finding alternative measures to avoid the damage. However, in practice, a confusion of the three notions (avoiding, reducing and compensating) appears (Steichen, 2009, p.147). Thus, to answer this obligation, firms usually propose general measures answering to the whole obligation, without presenting alternative measures for each condition. Consequently, the compensation measures mainly draws the firms' attention. That is why, it is necessary to reconsider the Environmental Impact Assessment's disposition.

In fact, this disposition is finally not implemented by firms in a preventive way. The disposition requires companies "to avoid, to reduce and, when it is possible, to compensate for environmental damages"<sup>11</sup>. Although the law gives an obligation to avoid and to reduce impacts, it does not oblige firms to compensate. Indeed, it only requires compensation "when it is possible". But at the end, companies much prefer to directly compensate for damages instead of trying to avoid them.

Moreover, if avoiding and reducing environmental impacts impose a preventive attitude from companies, the compensation does not. Indeed, using compensation means that the damage will be realised. Even though it is compensated, the environment is nevertheless impacted. So, the drift of the EIA Law comes from the main place attributed to compensation to the detriment of preventive measures. Thus, it may be good to think about strengthening the obligation of prevention and to give compensation the supplementary place which was

<sup>11</sup> See for example, article 5§3 Directive 85/337/CEE and its Annex IV. See the article L122-3 of the French environmental code. See also, article 5 Directive 2001/42/CE.

initially attributed to it. Consequently, compensation should not appear in a preventive disposition, but it should be considered in a different disposition that only frames it.

Reflections arise to create a clear separation between measures that lead to reduce impacts and measures that lead to compensate for them. This separation could be made through the creation of a new procedure which would impose firms to first propose their project only with preventive measures. Through this method, the project manager would be obliged to first think about alternative measures to limit the project influence on the ecosystem. Then, the authority which gives its approval on the firm's request, would analyse the alternative scheme proposed, and would give its opinion about whether it is necessary to go for compensation or not.

If compensation measures are needed, so, an independent authority would be competent to evaluate them. Then, with the independent authority's agreement, the request could be transmitted to the authority that gives the last word to approve the project.

Such a reform would present several advantages. Indeed, it would assure the enforcement of preventive measures and would oblige firms to supply a very detailed Environmental Impact Assessment. So, it would questioned the EIA law flexibility which lacks of precision and which gives wide room to firms. This new procedure would oblige industrial to analyse the ground and to propose alternative measures. Consequently, it would impose firms to rationalised their projects scheme.

### **2.1.2. For a volunteer rationalisation of firm's project**

Some companies already take environmental constraints into account by rationalising their initiatives from the beginning of the project. The project's rationalisation consists in organising the project in a way that takes into account environmental impacts from the first steps of its creation. The implementation of this rationalisation is currently developing through the progressive improvements of the Environmental Impact Assessment.

Until the 70's, the way experts used to evaluate industrial impacts was mainly linear (Andre, 2007, p.165). It means that project manager used to take environmental impacts into account after the elaboration of its project, and he did not plan alternative solutions. The impact assessment focused on its initial plan and did not allow any modifications of the project (Andre, 2007, p.165). Thus, for example, using linear method can cost time and money.

Indeed, the construction of an highway was planned but it was crossing a forest very rich in biodiversity. The works began until a rare sort of beetle were discovered. It appears that the project manager did not take the environment into account while creating the project, and he realised an EIA at a minimal level which did not indicate the presence of this sort of beetle. The pique-prune is a specie protected by the Bern Convention on the Conservation of European Wildlife and Natural Habitats 1979, Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora and a French decree of July, 1993. Consequently, works were immediately interrupted.

The EIA's failure was also a constraint because the project manager was not able to plan other alternatives to the highway plan. It was finally built thanks to the transfer of the trees that sheltered the beetle, outside the plan. So, the environment has been adapted to human activity instead of having a human activity integrated to the environment. The preventive aim the EIA was supposed to have, was definitely a failure. This linear approach is a rationality (called functional) which needs to be overtaken in order EIA to be an efficient tool to integrate project into the ecosystem.

The iterative approach appears progressively during the 80's, particularly in the United-States. It is a rationality of substance that integrates a social approach of the project. The Grenelle's development and the creation of the Environmental Authority answer to this concern. This method helps the project manager, from the elaboration of the project, to take into account the ecological particularities of the site, and to propose alternative solutions in case any problem of integration and incompatibilities appear. The iterative method gives to the project manager, the option to act back. Thus, he can review its initial position and adapt it to the particularities of the ecosystem revealed by the EIA (Andre, 2007, p.165 ).

To rationalise a project helps companies to respect the environment without questioning the development of its activities on a long term vision. To integrate impact assessment before the elaboration of the project gives security to firms. Thus, they avoid both environmental impacts and project's modifications that costs a lot of money. That is why, in order to anticipate on the strengthen of EIA Law, companies should also put an interest on pre-centring studies which limits impacts by centring a project comparing the available site with the project's necessities. Regarding the photovoltaic park example we talk about earlier can illustrate this point. The available land was 300 hectares long but the photovoltaic park only



needs 160 hectares to be efficient. So, within de 300 hectares, the ecological engineers consultants firm defined the 160 hectares that influences less on ecosystem particularities. Pre-centring studies are not yet part of the obligations imposed on EIA, however, the temporary decree of the Grenelle 2 application defines this pre-centring work regarding the article R.122-4 of the environmental code.

Moreover, using the sequential logic would also help companies to prevent their activities from environmental damages. Indeed, this logic aims for companies at taking decisions that can be modified later on, following scientific expertises improvements (Chassandre, 2008). The implementation of measures which aim at planning strategic failures impose the implementation of regular control and up-to-date measures, in order to insure a long term environmental security. This approach would be perfectly adapted to the environmental integration whished by environmental law.

Thus, companies have the possibility to really protect the environment and to integrate there projects into ecosystem with a long term vision. The best strategy to chose would be to enforce now the more preventive measures. However, such measures would cost more at the beginning, but would be more efficient in long term. To the contrary, thinking with an economical point of view would lead companies to act with a court term logic, realising an EIA which gives priority to economical and societal needs, and consequently, with a limited perspective of integration. In such cases, firms would much prefer to impact the environment and to pay for compensatory measures. Anyway, the compensation method develops widely. Consequently, it is difficult not to take this evolution into account, that is why, it seems necessary to frame the use of such methods.

## 2.2. To frame the use of the compensation methods

To frame the use of the compensation methods, it is first necessary to accentuate the necessity of developing "good" methods of compensation for environmental damages (2.2.1.). Also, compensatory measures are developing quickly and the price it costs to compensate, impacts on the ethical question of the price to give to biodiversity destruction. That is why, it is important to have a reflection to anticipate on the potential creation of a market of compensatory measures (2.2.2.).



### 2.2.1. Developing "good" methods to compensate for environmental damages

The aim of compensation is to substitute an impact firm cannot avoid, by the protection of a ground which constitutes an equivalent ecosystem. To do so, many questions arise. Indeed, the compensation imposes to protect a ground that already contains an ecosystem, so, or the firm will pay someone to preserve an area that is already existing and, in such a case, the compensation does not improve the environment's conditions; or the firm will create an equivalent ecosystem to the destructed one but will consequently modifies an existing ecosystem. Moreover, if compensating a damage by preserving an existing ecosystem seems to not improve the environment's conditions when this existing ground is a non- building ground, then it can be turned into good compensation when this preservation is relative to a building ground. It means that this particular ground won't be used to develop humans interests but it would be guarded for ecological ones.

Such a good compensation is implemented in the Belgium legislation for example. Indeed, the articles 167 and following of the Wallon code of urbanism management (CWATPE), entered into force in 1998 march 1st, mentions that "the registration of new zones of mixed or industrial economic activity is globally compensated with the transfer of disused sites of economic activity" (Steichen, 2009, p.155). It means that to build a project, each hectare the project will damage, has to be compensated by the rehabilitation of an hectare of former industrial sites. This can be considered as a good compensation, as the hectares compensated are preserved from industrial implantations. It means that it limits industrial development. Although compensating by using an non-building area does not limit industrial development, then it can be considered as a less efficient way to compensate.

Compensation method can find a limit with the land availability. Indeed, for a compensation to be approved, the firm must have found equivalent land available to be bought in order to compensate a damage. However, it is not always possible to find such an equivalent land in a geographically limited area. To illustrate this point, an EIA mentioned its difficulties to fill the compensation obligation as no land where available. Thus, the ecological engineer consultants firm revealed, within its EIA, the reasons why compensation measures were difficult to implement : "After a fruitless research regarding the public domain (not enough surfaces concerning this land), a compromise of long lease is planned. Indeed, the land research on these areas is extremely difficult : the land division, the lack of public property,

the conservative or political reactions, are many parameters which made the compensation step complicated " (Empirical Report, 2010).

The land availability also reveals the problem of the equivalence of land quality. Indeed, the difficulty remains on finding the same ground quality. It means that the land used for compensating the destructed land has to have the same kind of living ecosystem which it is sometimes difficult to analyse, and then, to find. Scientific studies are developing to define ecosystems in terms of services (CGDD, 2009). Indeed, an ecological damage deteriorates natural resources. It implies changes in the ecological functions of these resources, and consequently, changes in the ecological services it can return. These ecological services correspond to the benefits humans can take on, regarding the biological process that helps the development of humans' activities.

Defining the ground quality by evaluating ecological services which returns from natural resources may play a positive part to compensate a damage, but it also contain risks it is necessary to frame.

### **2.2.2. Framing the compensation's development to limit biodiversity misuse**

If Scientifics try to find solutions for the ground quality problem, the Caisse des Dépôts et Consignations (CDC) tries to answer the ground availability problem by creating a subsidiary, called "CDC biodiversity". Its mission consists in proposing services of land reassurance. Just like the mechanisms of Mitigation Banking existing in the United-States, the idea is to create spare of housing environments which allows the creation of instruments of exchange to face possible environmental responsibilities (Trebulle, 2009, p.27). Thus, "CDC biodiversity" proposes a system of transactions between the project manager responsible for pollution and an operator capable of offering ecological units (number of individuals, ecological feature) that can compensate for the ecological damage caused by the company (Steichen, 2009, p.144).

The risk which arises is to create a market which aims at defining plot of land regarding a number of units that corresponds to species, services or other ecological functions presents on the land. To find equivalence comparing to another land would mean to define criteria in order to reach this equivalence. So to define criteria also means a subjective choice at the time of defining ground quality, indeed, it means that other elements would be eliminated from the definition of this ground quality.

Creating ecological units to facilitate compensation and exchange may tend to popularise biodiversity and to create a new kind market. Indeed, the CDC-Biodiversity is already considered as a bank that offers and exchanges titles (although CDC does not consider that a new market is developing). However, this evolution does not seem to be an answer to the biodiversity loss (because compensation is based on the acceptance of a damage), and it does not help firms to act in a preventive way. Indeed, if a firm has money to buy biodiversity units and use the compensation method, why should it wastes time to avoid damages? To frame such a development, a law professor of the French University of Nice proposes to create an independent authority to regulate this new market. The idea is to anticipate the creation of this new market by offering a frame to avoid drifts. Propositions to refer to the CO2 market appear.

Developing compensation methods and creating a market of compensation are linked within a vicious circle. Indeed, creating a market would facilitate the use of compensation methods. On the contrary, developing compensation methods promote the need for such a market. Then firms can play an important part on such context. Their strategic position while answering to Environmental Impact Assessment's disposition gives them the opportunity to protect the environment by acting in a preventive way, or to deteriorate it, little by little, choosing the economical facility to compensate damages that amount to an infinite possibility to destroy the environment, as far as money can pay for it.

## **Conclusion**

Environmental Impact Assessments were created to contribute to the integration of companies into the global ecosystem. However, the law is wide and gives firms the control of these tools. So, as we have noticed during this paper, allowing firms to balance their economical interests with environmental constraints mainly leads to ecological damages and the need to compensate for it, which was not the initial objective of EIA. The strengthen of the law, through the requirement to use preventive measures, can be a solution to frame firms' behaviour. Nevertheless, the development of measures of compensation is quick and needs particular attention. Thus, the question of enforcing firms' self-responsibility regarding their environmental impacts remains essential, but is strengthening the law a good mean, or should firms be the actor of this change? Here is the challenge of the EIA's law development.

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